

Message Text

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PAGE 01 SEOUL 05430 230949Z
ACTION OES-07

INFO OCT-01 EA-10 ISO-00 ACDA-12 CIAE-00 INR-10 IO-13
L-03 NSAE-00 NSC-05 EB-08 NRC-05 SOE-02 DODE-00
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DEPT FOR OES/NET/RIC, D.H. COOPER

DOE FOR R. WILLIT

DEPT PASS NRC, J. LAFLEUR

E.O. 11652: N/A
TAGS: TECH ENRG KS
SUBJ: KAERI VIEWS ON DEMONSTRATION OF 20 PERCENT ENRICHED TRIGA
FUEL

REF: STATE 151719

1. KOREA ATOMIC ENERGY RESEARCH INSTITUTE (KAERI) PRESIDENT
HYUN, KYUNG-HO IS INTERESTED IN DEMONSTRATION OF PERFORMANCE
AND ECONOMIC ASPECTS OF NEWLY DEVELOPED 20 PERCENT ENRICHED
FUEL ELEMENTS IN FURTHERANCE--AS OF SIMPLIFYING RESEARCH
REACTOR FUELING PROBLEMS AND NON-PROLIFERATION GOALS.

2. AS A COUNTERPROPOSAL TO REFTTEL (PARA. 4) GENERAL ATOMIC
SUGGESTION THAT SIX TO EIGHT NEW 20 PERCENT ENRICHED ELEMENTS
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PAGE 02 SEOUL 05430 230949Z

BE SUBSTITUTED FOR A LIKE NUMBER OF THE NINETY-SEVEN 70 PER-
CENT ENRICHED ELEMENTS ALREADY ON ORDER, HYUN IS PREPARED TO
PLACE A NEW ORDER FOR AN ADDITIONAL SIX NEW-TYPE 20 PERCENT
ENRICHED ELEMENTS IF GENERAL ATOMIC IS PREPARED TO
SUPPLY INSTRUMENTATION TO COLLECT NECESSARY PERFORMANCE
DATA.

3. SCIATT SUGGESTION THAT DEMONSTRATION IRRADIATION OF AS MANY AS TWELVE ADDITIONAL NEW 20 PERCENT ENRICHED ELEMENTS (TOTAL OF 18 NEW TYPE 20 PERCENT ELEMENTS IN THE CORE) WOULD GREATLY IMPROVE STATISTICAL RELIABILITY OF DEMONSTRATION WAS REGARDED AS AN UNDERTAKING OF JOINT RESEARCH PROGRAM PROPORTIONS WHICH WOULD INVOLVE TIME FOR NEGOTIATIONS CONCERNING COST-SHARING AND PROGRAM PLANNING. THEY ARE WILLING TO DISCUSS THIS KIND OF PROGRAM BUT FEEL THEIR INTERESTS ARE BEST SERVED NOW IF THE TRIGA MARK III CAN BE REFUELED FOR OPERATION AS SOON AS POSSIBLE.

4. THE KAERI MARK III TRIGA CORE PLATE HAS 121 HOLES WHICH ARE UTILIZED AS FOLLOWS: FUEL ELEMENTS, 114 HOLES; ION CHAMBERS, 3 HOLES; CENTRAL THIMBLE, 1 HOLE; IRRADIATION FACILITY, 1 HOLE; PNEUMATIC IRRADIATION FACILITY, 1 HOLE; PNEUMATIC CONTROL ROD (NOT, REPEAT NOT A FUEL FOLLOWER CONTROL ROD), 1 HOLE. IT SHOULD BE NOTED THAT THE REACTOR NORMALLY OPERATES WITH 4 FUEL-FOLLOWER CONTROL RODS IN THE CORE, ALL OF WHICH OCCUPY FUEL ELEMENT HOLES.

5. KAERI'S RECENT 70 PERCENT ENRICHED FUEL ELEMENT ORDERS INCLUDE: FIRST ORDER: 10 FUEL ELEMENTS (FE) AND 5 FUEL FOLLOWER CONTROL RODS (FFCR). SECOND ORDER: 15 FE AND 2 FFCR. THIRD ORDER: 75 FE AND 5 FFCR. BECAUSE REACTOR WILL OPERATE WITH ONLY 4 FFCR IN CORE LIMITED OFFICIAL USE

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PAGE 03 SEOUL 05430 230949Z

AND ALL 100 FE IN CORE, A TOTAL OF 104 FUEL ELEMENT HOLES ARE FILLED. THIS LEAVES 10 CORE PLATE HOLES OPEN. EIGHT FFCR'S WOULD NOT BE IN THE CORE.

6. THE NEW-TYPE 20 PERCENT ENRICHED ELEMENTS WOULD OCCUPY SIX OF THE TEN (114 MINUS 104) UNOCCUPIED FUEL ELEMENT HOLES. KAERI FEELS THERE IS A LIMITED ECONOMIC RISK (COST OF RADIOACTIVITY CLEANUP FOLLOWING FUEL CLAD RUPTURE) INVOLVED IN DEMONSTRATING PERFORMANCE OF THE NEW-TYPE 20 PERCENT ENRICHED FUEL, PARTICULARLY FOR PULSED OPERATION AND WOULD APPRECIATE RECEIVING APPROPRIATE DATA.

7. KAERI HOPES TO RECEIVE ALL ORDERED FUEL ASAP.
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